DEVELOPING A BENCHMARKING PROGRAM FOR ORGANIZATIONAL SUCCESS

Executive Development

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ABSTRACT

The problem was that the Casper Fire Department had no existing performance measurement program in place that used benchmarking to measure, evaluate and monitor the department's performance.

The purpose of this research was to evaluate and identify an effective plan that would aid in the development and implementation of a benchmarking program for the Casper Fire Department.

Evaluative and action research was conducted to answer five research questions:

1. What is benchmarking and why is benchmarking important in measuring performance?
2. How and why have public and private sectors developed benchmarking programs for their agencies, businesses and organizations?
3. What are some benchmarks that are being used by fire departments across the Country to measure and monitor their performance?
4. Based on what others have found to be successful, what model and/or process should be used to develop and implement a benchmarking program within the Casper Fire Department?
5. What fire departments, if any, would be interested in becoming benchmarking partners with the Casper Fire Department?

The procedures used in this research project were comprised of a literature review and a survey. Applicable literature was analyzed to assist in the definition, purpose, benefits and implementation processes of benchmarking. A survey instrument was utilized to help determine how many fire departments were using benchmarking processes. The survey was also conducted

to gather a representative sample of benchmarks being used by similar sized fire departments. The survey also identified a list of similar sized fire departments that would like to be considered as benchmarking partners with the Casper Fire Department.

Results of the literature review and survey also suggested that benchmarking was important due to the fact that it has been used as a tool to continually improve an organization's performance and service delivery. It was also found that many different benchmarking implementation models existed. However, the research results lead to the suggested use of the Plan, Do, Check, Act (PDCA) cycle as the implementation model of choice.

Recommendations were made to adopt the PDCA cycle as an implementation model for use by the Casper Fire Department in the development of their benchmarking program. Survey results also provided useful data that was available in the identification of benchmarks and benchmarking partners.

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INTRODUCTION

As we examine ways to improve our service delivery, one management tool that is being used to improve the quality and performance of services in both the private and public sector is "benchmarking". "The essence of benchmarking is measuring, managing and satisfying customer requirements and expectations, assessing your strengths and weaknesses, finding and studying the best practices wherever you find them, and adapting what you learn to your circumstances" (Patterson, 1996, p. ix).

The problem for the Casper Fire Department is that there is no existing performance measurement program in place that uses benchmarking to measure, evaluate and monitor the department's performance. Others share this problem in the public and private sector as well.

> One of American companies' major problems is their inability to use quantative management data effectively. Of course, executives all know how to read their financial statements. But that is the score of yesterday's game. They don't do as good a job of developing performance metrics and benchmarks to understand how they are doing today, and what data they need tomorrow (Fitz-enz, 1997, p. 169).

The purpose of this research is to evaluate and identify an effective plan that will aid in the development and implementation of a benchmarking program for the Casper Fire Department. A survey was used to gain feedback on the use of benchmarking in the fire service. Five research questions were developed to guide this research project to a successful conclusion. Evaluative and action research will be used to answer the following research questions:

1. What is benchmarking and why is benchmarking important in measuring performance?

2. How and why have public and private sectors developed benchmarking programs for their agencies, businesses and organizations?
3. What are some benchmarks that are being used by fire departments across the Country to measure and monitor their performance?
4. Based on what others have found to be successful, what model and/or process should be used to develop and implement a benchmarking program within the Casper Fire Department?
5. What fire departments, if any, would be interested in becoming benchmarking partners with the Casper Fire Department?

BACKGROUND AND SIGNIFICANCE

The Casper Fire Department services the City of Casper, Wyoming. Casper is a community of approximately 50,000 people located in central Wyoming. The department is organized with a Fire Chief, 3 Division Chiefs, 3 Shift Commanders, 3 Fire Inspectors, 15 Fire Captains, 18 Fire Engineers, 30 Firefighters and 2 support personnel. A wide variety of emergent and non-emergent services are provided to the community. In general, these services include fire prevention, fire suppression, emergency medical services, technical rescue, hazardous materials, and public education. More specifically, fire prevention activities include origin and cause investigation, arson investigation, code compliance, building inspections, plan reviews, fire protection system inspections and home day care inspections. Fire suppression services include both structure and wildland. Emergency medical services are provided at a basic Emergency Medical Technician level. The department provides “first response” to the community and does not transport patients. Emergent and non-emergency medical transportation is provided to

the community by an Advanced Life Support ambulance and Paramedics from the local hospital. The Casper Fire Department also provides emergency medical standbys at local sporting venues and at other special events. Technical rescue services include water, swift water, diving, ice rescue, high and low angle rope rescue, extrication and confined space. A team of fire department personnel who are trained to the technician level performs hazardous material response services. All department members perform public education activities in a variety of subjects such as CPR, first aid, fire safety, injury prevention, fire extinguisher usage, fire station tours and web casting on the internet. In other service areas, the department recently teamed up with the Planning department to enhance code and compliance issues directly related to controlling weeds within the City. It is also important to note, that over the past year, a team of administrators, managers and line personnel drafted a new mission statement, core values statement, and strategic plan for the department. As a note, benchmarking is stated as a goal in the strategic planning document. The strategic plan will be presented for formal adoption in the near future.

The aforementioned services and activities have been developed and implemented over the past 107 years to provide quality public safety protection and to enhance the quality of life for the citizens of Casper. Historically, the majority of these services have been tracked and the department has regularly generated year-end productivity reports that show how many of each activity and/or service area were completed. In essence, these reports are workload measures that detail the "how many" in each service area. "Workload measures, also called output measures, indicate the amount of work performed or the amount of the services received" (Ammons, 2001, p. 13). These output measurement reports are disseminated annually to the City Council, City Manager, Assistant City Manager, citizens and employees of the fire department

for informational purposes. And until recently, these reports have been accepted as legitimate annual reporting from the Casper Fire Department.

Recently, the City Manager directed the Casper Fire Department to develop a performance measurement program that uses benchmarking and benchmarking partners as a methodology to monitor, evaluate, compare, and improve service delivery to the community. This new direction towards a performance based measurement system is driven by a commitment to continually improve work performance and customer service in the community. Historically, the Casper Fire Department has based its performance and quality of service delivery on the expressed perceptions of community members, elected City officials, appointed City officials and its members. These perceptions have based on attitudes, personal experiences with the fire department and the analysis of annual workload/output statistics. While these perceptions are important in gauging ones performance, they only provide a partial picture of the department's performance. In an effort to provide accurate performance indicators another process should be included to provide factual measurements so that the perceptions of citizens, managers, chief officers and employees can be validated or disproved. This performance based measurement system needs to monitor key performance indicators to ensure that the fire department is seeking and succeeding in quality improvement. This measurement system should also be continuous in its analysis of performance. As Randy Bruegman states, "Quality improvement also needs to be continuous because once you feel that you have reached the best possible level of quality, your quality will have only one place to go…down" (Bruegman, Preface, p. 14). One such performance measurement system that is used in the public and private sectors is "benchmarking". Benchmarking provides a scorecard that decision makers can look at to determine how their business or organization is performing internally as well as how they are

performing in comparison with others. One perspective on benchmarking is found in the following statement.

> As you will see, we use "benchmarks" as a level of performance we seek to meet. It is the same idea as a golfer seeking to have a lower score the next time out, an investor seeking to have a lower return on investment or a car buyer shopping for the lowest price. A benchmark is a target to shoot for in getting government costs under control or improving the quality of government services. If you don't have a target and are not careful about measuring your progress, you are not serious about continuous improvement" (Coplin & Dwyer, 2000, p. 67)

The relevancy of this applied research project and the National Fire Academy's *Executive Development* course lies in the concept of professional development. This author's professional development as a Chief Officer is being enhanced in the areas of knowledge, critical thinking, decision-making and program development. As a result, this author's administrative skills are being strengthened and a valuable analytical tool will be developed to assist other managers in evaluating the department's performance.

As an element of this research, a survey was conducted to gain information on the use of benchmarking in comparably sized fire departments. The survey was significant in evaluating the use of benchmarks and identifying potential benchmarking partners in the fire service.

LITERATURE REVIEW

The literature review for this project included information that was found in books, journal articles, reports, and Executive Fire Officer Applied Research Projects.

One of the first aspects of this project is to ascertain a working definition of benchmarking. *Webster's Third New International Dictionary* defines a benchmark as "a point of

reference from which measurements of any sort may be made" (Gove, 1981, p. 231). In James G. Patterson's book *Benchmarking Basics: Looking for a Better Way,* Patterson defines benchmarking in the following manner.

> The word benchmarking originally was a land surveyor's term. In that context, a benchmark was a distinctive mark on a rock, building or wall, and it was used as a reference point in determining the position or altitude in topographical surveys and tidal observation. Today a benchmark is a sighting point to make measurements; a standard against which others could be measured (Patterson, 1996, p. 4).

Coplin & Dwyer (2000) suggest that benchmarking is defined as having two parts. First, they are indicators that measure some type of condition. Secondly, they include a goal for that type of condition (p. 68). The authors continue their definition by stating that "Benchmarks are best thought of as measureable objectives, a structured method of evaluation" (p.68).

Many other definitions of benchmarking were found while reviewing books, journals and reports. For example, "Benchmarking is a way of comparing your processes to those of a recognized leader, in order to identify gaps" (Koehler & Pankowski, 1996, p. 7).

Peter Drucker explains benchmarking by saying,

> The most recent of the tools used to obtain productivity information is benchmarking-comparing one's performance with the best performance in the industry or, better yet, with the best anywhere in business. Benchmarking assumes correctly that what one organization does, any other organization can do as well. And it assumes, also correctly, that being at least as good as the leader is a prerequisite of being competitive (Drucker, 1998, p. 92).

In the journal, *Public Risk,* another historical perspective and definition of benchmarking

is found.

> Historically, the term benchmark traces its origins to the 1791 British Ordinance Survey. The BOS used the mark on rocks to identify altitude and elevation. The horizontal line above the arrow was a slit in the rock that formed a temporary bench for a surveyor's leveling staff. Thus, conceptually these original benchmarks correspond to measuring a level of performance in contrast to current usage that seeks to use the benchmark to improve performance (Weller & Sayegh, 1998, p. 18).

In his Executive Fire Officer Applied Research Project entitled *Benchmarking the Fire Service: Focusing on Results and Improvements* Rowland Herald (2000)states, "The key purpose in benchmarking is to document the current state of services and provide a guide on how it should be improved" (p. 27).

In a journal article entitled, *Benchmarking for Quality*, Sally Arnold defines benchmarking as, "the process of identifying, learning, adapting and measuring outstanding practices and processes from any organization to improve performance" (Arnold, 2000, p. 14).

Two authors suggest that another term should be used in conjunction with benchmarking. This new term is "baseline".

> Baselines describe those things that you can measure and keep track of over time, and they indicate whether you're consistently performing at a certain level. Related to baselines is the idea of "benchmarking." Benchmarking takes baselines a step further. It's the idea of constant process improvement. Put another way, baselines are what we do and benchmarking is how well we would like to do it (Coleman, 1997, p. 30-31).

In the book *Exceeding Customer Expectations: Quality Concepts for the Fire Service* Randy Bruegman writes about a similar interworking relationship between baselines and

benchmarks. He defines a baseline as "…a database from which something can be judged" (Bruegman, Chap. 4, p. 1). The author continues to tie baselines and benchmarks together by explaining,

> Baselines are the current level of performance at which a department, process, or function is operating. A benchmark is defined as a standard from which something can be judged. Searching for the best practices will help you define what superior performance is. Therefore a benchmark is the best performance that can be found by your department or others performing similar services of functions (Bruegman, Chap. 4, p. 1).

He continues to define benchmarking by saying,

> Benchmarking can be defined as the search for the best practices that lead to superior performance. Benchmarking is the process of continuously comparing and measuring an organization with similar departments to gain information that will help the organization take appropriate action to improve its performance (Bruegman, Chap. 4, p. 8).

Ronny Coleman (1999) summarizes the definition of what benchmarking is by saying, "In other words, it describes what we do and how well we do it over an extended period of time" (p. 32).

A definition and understanding of benchmarking is important in context with this research project. Another important element of this research is to determine why benchmarking is used to measure performance and what are some benefits to it.

In his writings of why benchmarks are needed Jac Fitz-enz explains,

> The drive to innovate comes from the desire or need to achieve some type of organizational improvement such as: Increase market share, enter a new market, or reduce operating expense. The objective is often stated either as raising our level of

> current performance or as achieving or exceeding an external bencmark-usually another company's performance. Normally, the improvement is stated in objective terms. The target serves two purposes. First, it gives direction and a range to the effort, often implying the risk as well. If we are told that the goal is to intoduce a new product or service by a certain date, and that if we don't we will lose market share to competitors, the risk is explicit. Second, a performance goal or benchmark target trades on people's natural desire to achieve. Most people want to do well. Many of them want to do better than their competitors (Fitz-enz, 1997, p. 168)

Through his research on benchmarking Patterson (1996) explains that benchmarking creates and environment in an organization that recognizes the importance of continual improvement and change (p.19). He also proposes that benchmarking identifies systems that can be significantly improved by adapting or matching systems that are proven better (p. 19). Patterson has also proposed that organizations can improve twelve areas of organizational activity by using benchmarking. These twelve areas of improvement are:

#1. Meeting Customer Requirements

#2. Adapting Industry-Best Practices

#3 Becoming More Competitive

#4 Setting Relevant, Realistic and Achievable Goals

#5 Developing Accurate Measures of Productivity

#6 Creating Support and Momentum for Internal Cultural Change

#7 Setting and Refining Strategies

#8 Warning of Failure

#9 Testing the Effectiveness of Your Quality Program

#10 Reengineering

#11 Promoting Better Problem Solving

#12 Providing an Education and Creativity Boost (Patterson, 1996)

In an effort to continually improve public services within Fairfax County, Virginia, the Department of Management and Budget implemented a performance measurement program that utilizes benchmarks. In its 2001 report entitled *A Manual for Performance Measurement: Fairfax County Measures Up,* the authors state, "The most powerful reason for measuring performance is that citizens are continually demanding more responsive and competitive government" (Budget, 2001, p. 4). In addition to this reason, this report defines the following benefits of measuring performance.

> …many governments report beneficial changes to their organizational culture as a result of performance measurement. We have seen similar benefits accrue for Fairfax County. In general, governments that measure performance do so because it strengthens accountability, enhances decision-making, improves customer service, assists governments in determining effective resource use and supports strategic planning and goal setting (Budget, 2001, p. 5).

Using an analogy to sports one author explains,

> Someone once said that athletic activities would be a big waste of time if no one kept score. No one really wants to watch a lot of physical effort between two groups of individuals unless they can determine who did the best job of playing the game. In the fire service the opposing sides are the demand for services and our delivery of those services versus their efficiency and effectiveness. Keeping score in these cases is a matter

> of measuring the level of fire service effort as waged against the fire problem, EMS, inspections or any service we deliver (Bruegman, Chap. 4, p. 1).

Bruegman's analogy of keeping score in sporting events to benchmarking a fire department's performance is expounded on by describing some additional benefits of benchmarking. He goes on to say,

> Benchmarking can be used as a tool to improve organizational efficiency and effectiveness, to identity your customer needs, to select processes that are key to accomplishing organizational success, to collect quantifiable data with the ability to compare internal baseline and benchmarking statistics, to provide insights into new ways of doing business and delivery service, to assist in analyzing both your internal and external data collection, to identify those things which enable consistent superior performance, to assist you to learn the best practices that are being used by others who have achieved superior performance, and can assist in developing goals, objectives, strategies, tactics and organizational action plans aimed at making your department the best in the market that it services (Bruegman, Chap. 4, p. 8).

As fire service managers evaluate the benefits of benchmarking, Coleman (1999) asks, "Why should you even consider benchmarking?" (p. 33) He goes on to answer this question with the following statement.

> Benchmarking helps your department focus on significant improvements rather than incremental changes. It allows you to identify real targets to fix, improving the credibility of your organization. Benchmarking moves you from the quantification of what you're doing to the qualification of where you're going (Coleman, 1999, p. 33).

This literature review has researched the definitions of benchmarks, why benchmarks are

important to an organization and what benefits are derived from them, it also searches for ways that benchmarking programs can be implemented. In other words, what are some processes that organizations and managers have used to implement benchmarking programs?

Wilbur (1998) recommended a implementation process for benchmarking that met the needs of the fire department in which he is employed. It is a thirteen-step process that includes a compilation of various procedures that were recommended by four different authors and him. This implementation process is contained in Appendix A. The basic elements are described below:

1. Secure input and support from front line employees and supervisors.
2. Determine goal of information or process effort; e.g. quality improvement (benchmarking) or resource acquisition (comparative).
3. Identify what should be measured.
4. Identify the key performance variables to measure cost, quality, and efficiency for the functions …selected.
5. Identify (comparison or) benchmark partners – the selection of comparable organizations.
6. Collect data – develop a data collection method to measure the objectives.
7. Measure your own performance for each benchmarked item, and identify the gaps between you and the best in class.
8. Analyze data.
9. Insure your audience has a common level of understanding of terms and concepts prior to making any presentation.
10. Communicate findings internally.

11. Develop action plans – the preparation of a detailed road map showing how the department will accomplish its improvement goals.
12. Implement actions and monitor results.
13. Recalibrate benchmarks – the periodic review of benchmarks.

(Wilbur, 1998, p. 30)

Bruegman suggests using a process that uses the areas of planning, implementation and analysis and action. This implementation process can be found in Appendix B and is summarized as, "Planning includes: 1) Identifying what to benchmark, 2) Identifying companies and methods. Implementation and Analysis includes: 1) Collecting data, 2) Determining performance gap. Action includes: 1) Communicating findings and 2) Establishing goals, plans and measures" (Bruegman, Chap. 4, p. 6-7).

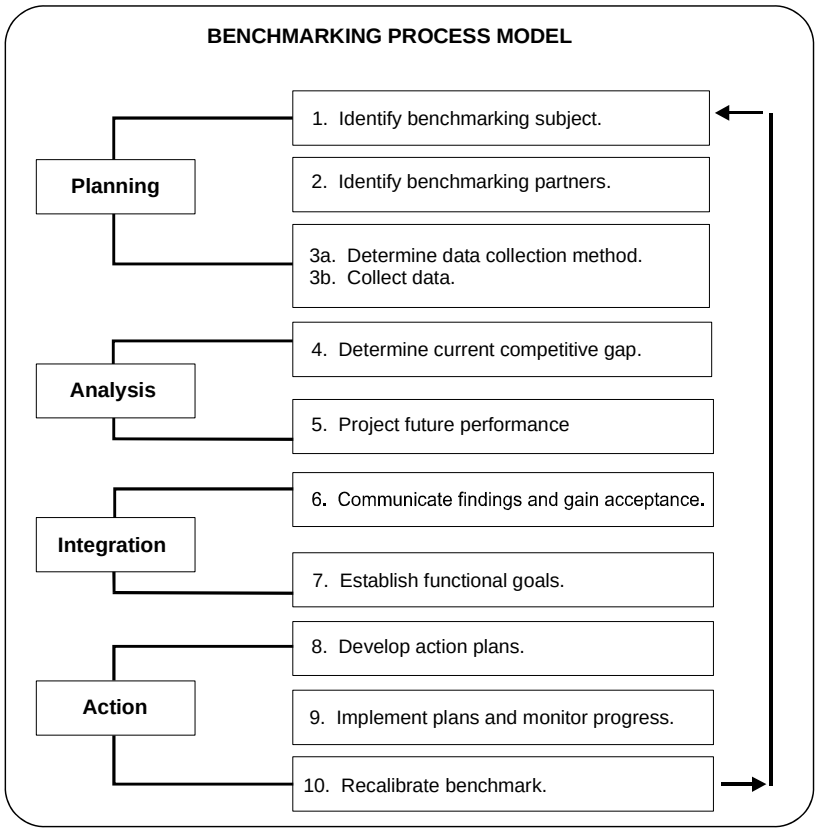
Jerry W. Koehler and Joseph M. Pankowski (1996) describe the process of benchmarking as consisting of several steps. They continue to explain and graphically define the process as follows:

> Quality experts differ on the number of steps and exact descriptions of benchmarking (as they do for all the tools), but the following components are found in most:
>
> Step One
>
> Identify the subject and key characteristics of the benchmarking. For example, an agency interested in accurate eligibility decisions for disability insurance based upon criteria set by the federal government might use and error rate supplied by the Social Security Administration.
>
> Step Two

Identify who you will benchmark – other agencies, companies or organizations – and collect data. In our example above, we would likely select agencies in other states performing the same work. We would look for the "the best," or those whose error rates are lower than ours.

Step Three

Analyze the reasons for the gaps that exist between your program and the best. Examine your processes (using teams who do the work) to see where improvements can be made. Examine what the best does hat makes them the best. Constantly improve and examine your processes. The Xerox Corporation won the Malcom Baldrige National Quality Award in 1989. In is publication *Leadership Through Quality Processes and Tools Review,* Xerox presented its concept of benchmarking ("Quality You Can Copy") as in the model below:



(Koehler & Pankowski, 1996, p. 7-8)

In an article entitled, *Raising the Performance Bar…Locally*, David Ammons (1997) explains that three different types of benchmarking have evolved. They are: "1) Corporate-style benchmarking, 2) Targets as benchmarks, 3) Comparison of performance statistics as benchmarks" (p.12). He summarizes that, "each of the three benchmarking approaches has value. Each is more valuable in some circumstances and for some purposes than are the others (p. 12). He gives us a condensed explanation of each in his writing,

> The corporate-style approach is generally more useful for a unit that is intent on reengineering. Its process orientation, its emphasis on best practices, and its depth of inquiry are qualities consistent with the information needs of process reengineering. The establishment of ambitious targets, as set by the Oregon Progress Board, often features direct citizen involvement, a broad focus on a range of important issues of conditions, high-profile visibility, and the potential for considerable media attention. This second form of benchmarking often addresses quality-of-life issues broadly, rather than focusing strictly on services controlled by the government. Although this focus on broad, societal issues limits the value of this version as a management tool for government administrator, in the view of man citizens this very feature increases its value a planning tool for what counts most-quality of life, whether or not it is connected directly or fully to governmental policies and programs. The third approach offers greater breadth than corporate-style benchmarking and for that reason is more attractive to governments that want a relatively quick assessment of their performance on several fronts. Its benchmarks are not arbitrarily established targets but are tied to the actual records of leading performers or to performance standards or targets deemed reasonable by other units,

making these benchmarks much less vulnerable to the charge that they are unattainable (Ammons, 1997, p. 12-14).

Ammons then asks the question, “Which approach is best?” (p. 14). He concludes by saying,

> The answer depends on the problem being addressed or the purposes for which benchmarking is undertaken. If the purposes are to identify operational strengths and weaknesses, to gauge the effects of operational changes, to place local performance in a meaningful context that is likely to draw media attention, and to assure the public that “someone is minding the store,” the third approach may be the best choice (Ammons, 1997, p. 14).

Ammons also points out that, “Some local governments (for example, Arlington, Texas; Reno, Nevada; and Salt Lake City, Utah) have adopted essential elements of the corporate model” (p. 12). He defines this model as follows:

“Corporate-Style Benchmarking in the Public Sector

1. Decide what to benchmark.
2. Study processes in your organization
3. Identify benchmarking partners.
4. Gather information.
5. Analyze the information.
6. Implement for effect.
7. Monitor results and take further action as needed” (p. 12).

In a risk management article entitled, *Benchmarking for Quality*, Sally Arnold

(2000) reports that a Colorado Risk Management Chapter implemented a benchmarking project that used a seven step benchmarking model. Arnold describes, “This chapter committee selected the ‘Seven-Step Benchmarking Model’ by Richard Y. Chang and P. Keith Kelly, from *Improving Through Benchmarking: A Practical Guide to Achieving Peak Process Performance”* (p. 17). This seven-step model is shown below.

1. Identify what to benchmark.
2. Determine what to measure.
3. Identify who to benchmark.
4. Collect the data.
5. Analyze data and determine the gap.
6. Set goals and develop and action plan.
7. Monitor the process (Arnold, 2000, p. 17).

Coleman (1997) suggests that,

> If you review the literature on this topic, you’ll find that there’s a simple formula to it: PDCAC. This stands for plan, do, check, act, cycle. Plan your action then do it, then check what you’ve done. The last step is to act on the changes that have resulted form your action. Altogether it’s a cycle that can be repeated (p.31).

Coleman applies this PDCAC cycle by stating, “Furthermore, benchmarking allows PDCAC to be done on an individual, company, battalion, or department, or even on a citywide basis. Benchmarking is a thought process that can be employed by anybody who wants to make an improvement” (Coleman, 1997, p. 31).

Randy Bruegman’s and Ronny Coleman writing’s on benchmarking processes are similar in form. The similarities lie in the usage of the plan, do, check, act (PDCA) model. Chief

Bruegman offers a graphic description of his PDAC process model. This benchmarking process model is contained in Appendix C.

In his book, *Benchmarking Basics: Looking for a Better Way,* author James Patterson (1996) defines the process of benchmarking with the PDAC cycle. This PDAC cycle is summarized below.

Phase 1: Plan

#1. Make sure all your employees know what benchmarking is, believe in its benefits and feel empowered to do the study and implement findings.

#2. Make sure management is committed to benchmarking, because they will have to commit time, allocate resources, remover roadblocks and reward the effort.

#3. What should you benchmark? Start with the customer. Customers will tell you when you make mistakes. Measure and track customer reactions. Collect data, good or bad and through formal surveys.

#4. Now you need to create a benchmarking project action plan. Successful benchmarking organizations make sure that they cover the following areas:

- Goals and Objectives
- Scope and Resources
- Key Players
- Critical Success Factors
- Roles and Responsibilities
- Milestones and Deliverables
- Performance Measures
- High-Level Process Flows

Once you select a process to benchmark, you need to study how you perform the process. You won't be able to ask intelligent questions about other people's processes if you don't understand your own. You also need to benchmark your process so you can have data of value to share with any partner. Benchmarking without fully understanding your own processes guarantees failure. One of your team's biggest challenges will be to match your process measurements to that of another organization. You can normally accomplish this by asking your benchmarking partner, "Here's what we're looking for…how do you measure it here?"

#5. Once you and your team have written the benchmarking plan and it is approved, you need to select benchmarking partners. Generate two dozen organizations you could benchmark against. From the original two dozen companies you have identified, narrow your field to six using a criteria matrix.

Phase 2: Do

#6. This phase entails collecting benchmarking data with your partners. You need to agree on a time frame for the study and any site visit, and agenda and the questions you'll ask. Remember:

- Never ask a question you wouldn't answer at your home organization.
- Never ask a question you wouldn't be able to answer about your own processes.

Phase 3: Check

#7. The data you gather in benchmarking will serve many purposes. Quantifying performance will clarify your organization's processes. Then comparing your

process to others' should identify performance gaps between what is and what could be. The larger the gap between you and the other organization, the greater the need for you to improve.

Phase 4: Act

#8. Now you are ready to take your data and apply it to improve your organization's processes. To understand better what you have, you and your team should compare your partners' answers to each question you ask about a process. What do each of the partners you've benchmarked do about a certain process? What are the results?

Then select the process that seems to work the best, adapt it to your organization, try it for a test period and evaluate the results. If it works, implement the improvement. Make sure you measure and monitor the new process to see if it continues to perform as expected. Always strive to improve the new process. This is a continuous, never-ending job (Patterson, 1996, p. 55-60).

Patterson completes his comments on the PDAC cycle extolling the importance of communicating your benchmarking data with everybody in the organization. He points out, "Share your success and failures with all and ask for everybody's suggestions and help." (p.60)

To conclude this literature review on benchmarking processes, Alfred O. Weller and Lisa Sayegh suggest the use of the following model. "A benchmarking study involves the following steps:

1. Set a benchmark(s) that represents managements expectation of performance.
2. Measure actual experience
3. Compare the measurement to the benchmark.

4. Identify and implement appropriate steps to improve performance" (Weller & Sayegh, 1998, p. 18).

PROCEDURES

The purpose of this research is to evaluate and identify an effective plan that will aid in the development and implementation of a benchmarking program for the Casper Fire Department. Evaluative and action research methodologies were employed throughout this research project to find answers to the five research questions.

This applied research project began with data collection and literature review performed at the National Fire Academy's Learning Resource Center. Subsequent data collection and literature review was conducted at the Casper College Library in Casper, Wyoming, and through the interlibrary loan process. The City of Casper City Manager's library was also used to gain specific information for this project. Books, journal articles, reports, previous Executive Fire Officer Applied Research Projects and a survey were utilized as the basis for research on this applied research project. It was this author's intent to utilize reference material and other information that was as current as possible.

In an effort to remain focused on the purpose of this project both evaluative and action research was utilized to find answers to the five research questions posed in this project. The literature review was performed to focus on research questions 1, 2 and 4. Research question 1: What is benchmarking and why is benchmarking important in measuring performance? Research question 2: How and why have public and private sectors developed benchmarking programs for their agencies, businesses and organizations? Research question 4: Based on what others have found to be successful, what model and/or process should be used to develop and implement a benchmarking program within the Casper Fire Department?

Evaluative and action research was also utilized in the development, implementation and evaluation of a survey instrument. The survey was designed to assist in answering research questions 3 and 5. Research question 3: What are some benchmarks that are being used by fire departments across the Country to measure and monitor their performance? Research question 5: What fire departments, if any, would be interested in becoming benchmarking partners with the Casper Fire Department?

A cover letter explaining the purpose and expectations of the survey was developed and attached to the survey instrument. The cover letter and survey instrument is contained in Appendix D and Appendix E.

The next step was to identify a list of fire departments that would receive the cover letter and survey. A request was made to the publishers of the *National Directory of Fire Chiefs and EMS Administrators* to provide this researcher with a mailing list of fire departments that met the following three criteria.

1. Fire departments in the United States of America
2. Fire departments that serve populations of 40,000 – 60,000
3. Career fire departments

The above mentioned criteria was used to identify fire departments across the County that are of similar size and make-up to the Casper Fire Department. A service fee was paid to the publishers of the directory and a query of the directories data base provided this author with a mailing list of 161 fire departments that satisfied the three criteria. Survey instruments were mailed to all 161 fire departments. Seventy-Seven surveys were completed and returned within the given time period. 84 surveys were not returned. This represents a 47.8% return rate of competed surveys.

The survey instrument asked the respondents nine questions. Questions 1 through 3 were designed to elicit information on whether these identified fire departments were using formalized benchmarks to measure their performance. And if so, what specific benchmarks were found to be useful and not useful. Question 4 asked those who were not currently using benchmarks if they were planning to use benchmarks in the future. Questions 5 through 7 asked for specific jurisdictional information such as the number of personnel, population of community and service area. Questions 8 and 9 asked the respondents if they would be interested in becoming benchmarking partners with the Casper Fire Department. And if so, they were asked to include the department name, contact name, mailing address, City, State, Zip Code, e-mail address and associated web site if applicable.

The results of the survey were tabulated and a number and percentage of Yes and No answers were compiled and documented for question 1. The results of question 2 were documented in the form of a list and number of benchmarks provided. The results of question 3 were also documented in the form of a list and number of benchmarks provided. The results of question 4 were tabulated and a number and percentage of Yes, No and Unsure answers were compiled and documented. The results of questions 5 through 7 were tabulated, compiled and documented to verify that the respondent's fire departments were of similar size and make-up to the Casper Fire Department. The results of question 8 were tabulated and a number and percentage of Yes and No answers were compiled and documented. The results of question 9 were compiled and documented in alphabetic order. The final results of the survey are contained in Appendix F.

Assumptions and Limitations

During the development of the survey instrument an assumption was made that all respondents of the survey would understand the meaning of the questions posed. Another assumption was made that either the Fire Chief or his/her designee would personally answer the survey and that they would have enough knowledge and expertise to answer each question as accurately as possible. This author also assumed that respondents who wished to be considered as benchmarking partners had the authority to do so.

Some limitations were experienced while developing this applied research project. First, of the 161 surveys sent out, only 77 fire departments returned a completed survey. This accounts for a 47.8% return rate. This return rate could limit the accuracy of the results. Secondly, the wording of the survey questions may have confused the respondents. This could have influenced the validity of the responses. Lastly, the author has limited experience in developing surveying instruments. This may have produced results that would be more accurately represented if the survey had been developed differently.

RESULTS

The results of this applied research project have been compiled from extensive literature review and survey information. The following results are provided to answer each of the five research questions.

Research Question One

What is benchmarking and why is benchmarking important in measuring performance? The literature review on this question found twelve varying definitions of the term benchmark or benchmarking. The plethora of definitions lead this author to look for a common theme in each of the definitions provided. Careful review and evaluation of the terms used to define

benchmarking in this project has lead to the identification of key words and phrases that are used most often. These key words and phrases are measuring, process, comparing against others, to improve performance and standards. This author has created a hybrid definition of the term "benchmarking" using these key words and phrases as the basis for the following definition.

Benchmarking is the process of measuring key performance indicators and comparing these indicators against set internal standards and other similar agencies to ensure continual improvement of services. The Casper Fire Department in the development and implementation of its benchmarking program will use this benchmarking definition.

The second part of research question 1 asks why benchmarking is important in measuring performance? Once again, the review of literature on this issue has discovered many reasons or justifications.

James G. Patterson (1996) expounds on this point and describes why benchmarking is important. He explains that benchmarking creates and environment in an organization that recognizes the importance of continual improvement and change. He also proposes that benchmarking identifies systems that can be significantly improved by adapting or matching systems that are proven better. Patterson continues to explain that organizations can improve twelve areas of organizational activity by using benchmarking. These twelve areas of improvement are:

#1. Meeting Customer Requirements

#2. Adapting Industry-Best Practices

#3 Becoming More Competitive

#4 Setting Relevant, Realistic and Achievable Goals

#5 Developing Accurate Measures of Productivity

#6 Creating Support and Momentum for Internal Cultural Change

#7 Setting and Refining Strategies

#8 Warning of Failure

#9 Testing the Effectiveness of Your Quality Program

#10 Reengineering

#11 Promoting Better Problem Solving

#12 Providing an Education and Creativity Boost (Patterson, 1996, p. 19-24)

In a report published by the Department of Management & Budget (2001) in Fairfax County, Virginia, provides further validity to the importance of performance measurement benchmarking and why it should be applied within a government organization. Findings in this report conclude that,

> …many governments report beneficial changes to their organizational culture as a result of performance measurement. We have seen similar benefits accrue for Fairfax County. In general, governments that measure performance do so because it strengthens accountability, enhances decision-making, improves customer service, assists governments in determining effective resource use and supports strategic planning and goal setting (Budget, 2001, p. 5).

Research Question Two

How do public and private sectors establish benchmarks for their agencies, businesses and organizations?

The literature review discovered many variations of suggested processes and models in reference to the development and implementation of benchmarking programs. It is important to

note that this author found no evidence of any universally accepted implementation model.

Rowland Herald's research concludes, "The problem with trying to apply a national model to local service providers is that nearly everyone providing service does so within the constraints of local circumstances" (Herald, 2000, p. 24). His research suggests that before person or organization make a decision as to which process or model is implemented an evaluation of the current needs of the local agency be considered.

David Ammons' writings suggest using one of three different approaches to implementing a benchmarking program. Ammons then asks, "Which approach is best?" (Ammons, 1997, p. 14). He concludes by saying, "The answer depends on the problem being addressed or the purposes for which benchmarking is undertaken" (p. 14).

Research Question Three

What are some benchmarks that are being used by fire departments around the Country to measure and monitor their performance?

The seventy-seven completed and returned surveys provided the answers to this research question.

Survey question 1. 77 respondents answered this question. 29 or 37.6% responded yes, that their departments were using formalized benchmarks to measure performance. 48 or 62.3% of the respondents answered no to this question.

Survey question 2. Of the 29 respondents who answered yes to question 1, these respondents listed a total of 185 specific benchmarks that they found meaningful to their departments. This equates to an average of 6.3 benchmarks per respondent. The complete list of 185 benchmarks is contained in Appendix F.

Research Question Four

Based on what others have found to be successful, what model and/or process should be used to develop and implement a benchmarking program within the Casper Fire Department?

Literature review provided the information used to answer this specific research question.

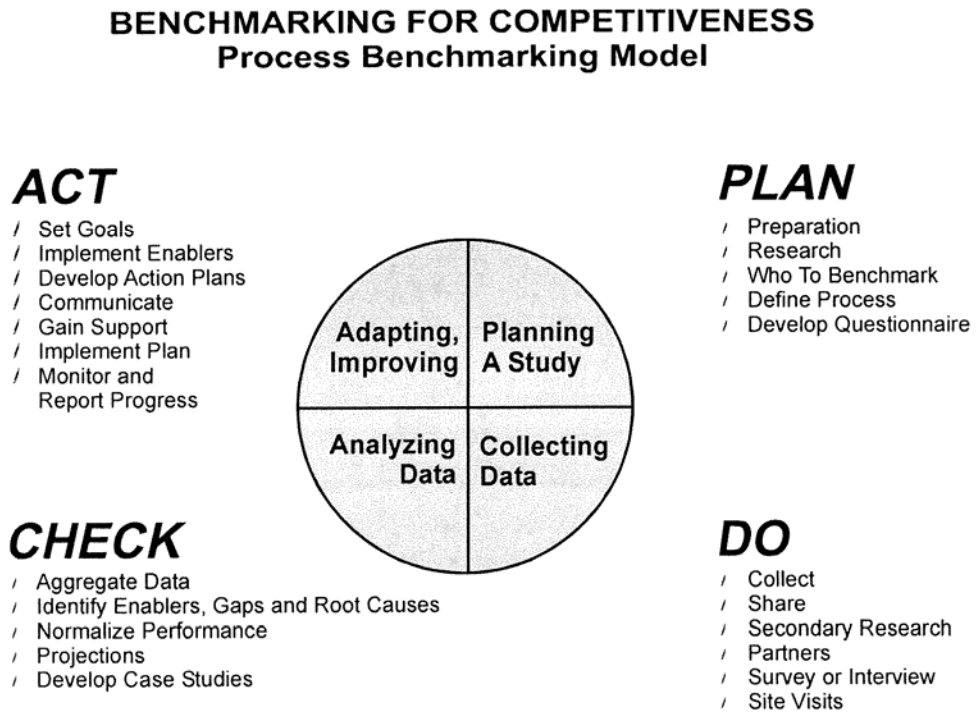
Many different benchmarking processes and models were proposed during the review of literature for this applied research project. In addition, this literature review did not produce one consensus model or process. However, it is evident that the Plan, Do, Check, Act (PDCA) process is practiced by many authors and experts in the field of performance measurement. As James Patterson explains, “No one best step-by-step procedure will ensure benchmarking success. However, there are a number of good models. The one thing all the models have in common is that they all follow the PDCA cycle” (Patterson, 1996, p. 55).

Ronny Coleman recommends a similar benchmarking process cycle in his writings. Coleman (1997) suggests,

> If you review the literature on this topic, you’ll find that there’s a simple formula to it: PDCAC. This stands for plan, do, check, act, cycle. Plan your action then do it, then check what you’ve done. The last step is to act on the changes that have resulted form your action. Altogether it’s a cycle that can be repeated (p.31).

Coleman applies this PDCAC cycle by stating, “Furthermore, benchmarking allows PDCAC to be done on an individual, company, battalion, or department, or even on a citywide basis. Benchmarking is a thought process that can be employed by anybody who wants to make an improvement” (Coleman, 1997, p. 31).

Authors James Patterson, Randy Bruegman and Ronny Coleman agree in the use of the PDAC model. Chief Bruegman offers a graphic description of his PDCA process model below.



(Bruegman, Chap. 4, p.8)

James Patterson uses the same PDCA format. He clearly outlines the process of benchmarking with the PDCA cycle in a step-by-step procedure.

Phase 1: Plan

#1. Make sure all your employees know what benchmarking is, believe in its benefits and feel empowered to do the study and implement findings.

#2. Make sure management is committed to benchmarking, because they will have to commit time, allocate resources, remover roadblocks and reward the effort.

#3. What should you benchmark? Start with the customer. Customers will tell you when you make mistakes. Measure and track customer reactions. Collect data, good or bad and through formal surveys.

#4. Now you need to create a benchmarking project action plan. Successful benchmarking organizations make sure that they cover the following areas:

- Goals and Objectives
- Scope and Resources
- Key Players
- Critical Success Factors
- Roles and Responsibilities
- Milestones and Deliverables
- Performance Measures
- High-Level Process Flows

Once you select a process to benchmark, you need to study how you perform the process. You won't be able to ask intelligent questions about other people's processes if you don't understand your own. You also need to benchmark your process so you can have data of value to share with any partner. Benchmarking without fully understanding your own processes guarantees failure. One of your team's biggest challenges will be to match your process measurements to that of another organization. You can normally accomplish this by asking your benchmarking partner, "Here's what we're looking for…how do you measure it here?"

#5. Once you and your team have written the benchmarking plan and it is approved, you need to select benchmarking partners. Generate two dozen organizations you could benchmark against. From the original two dozen companies you have identified, narrow your field to six using a criteria matrix.

Phase 2: Do

#6. This phase entails collecting benchmarking data with your partners. You need to agree on a time frame for the study and any site visit, and agenda and the questions you'll ask. Remember:

- Never ask a question you wouldn't answer at your home organization.
- Never ask a question you wouldn't be able to answer about your own processes.

Phase 3: Check

#7. The data you gather in benchmarking will serve many purposes. Quantifying performance will clarify your organization's processes. Then comparing your process to others' should identify performance gaps between what is and what could be. The larger the gap between you and the other organization, the greater the need for you to improve.

Phase 4: Act

#8. Now you are ready to take your data and apply it to improve your organization's processes. To understand better what you have, you and your team should compare your partners' answers to each question you ask about a process. What do each of the partners you've benchmarked do about a certain process? What are the results?

Then select the process that seems to work the best, adapt it to your organization, try it for a test period and evaluate the results. If it works, implement the improvement. Make sure you measure and monitor the new process to see if it continues to perform as

expected. Always strive to improve the new process. This is a continuous, never-ending job (Patterson, 1996, p. 55-60).

The result of the literature review for research question 5 suggests the use of the PDCA cycle when developing and implementing a benchmarking program.

Research Question Five

What fire departments, if any, would be interested in becoming benchmarking partners with the Casper Fire Department?

Survey question 8 asked if respondents would be willing to become benchmarking partners with the Casper Fire Department. Of the 77 respondents, 47 or 61% answered yes, 25 or 32.4% answered no, and 5 or 6.4% did not answer this question.

Survey question 9 asked those respondents who wished to be considered in serving as a benchmarking partner to include their, name, rank, department, department mailing address, city, state, zip code, e-mail address and applicable web site address.

Special Note

Survey questions 3 and 4 were created to elicit anecdotal information for use in the "Discussion" section of this applied research project.

DISCUSSION

"City governments need performance benchmarks, if they are serious about the efficient delivery of quality services. And their citizens need municipal benchmarks, if they are not!" (Ammons, 2001, p. vii) The importance of this quotation is reflected in the words "delivery of quality services". As a fire chief, how do I factually know that the fire department I administer is delivering quality services? How do I answer the local citizen or elected official that asks me how the department is doing? In the past, my answers have been based in perception and how

busy the department has been in performing their services. However, these perceptions and workload statistics provide very little proof that the fire department is actually delivering effective and efficient service products. Results of this research suggest that one can effectively evaluate an organizations delivery of services using benchmarking as a tool for the purpose of continual improvement.

For the benefit of this author and future readers of this research project, research was conducted on what benchmarks or benchmarking is. It was apparent to this author that the term "benchmark and/or "benchmarking" must be understood before one can apply its principles. Research results discovered many different definitions of the word benchmark. In an effort to create a working definition of the term for this project, this author captured some key words used in other definitions. The resulting evaluation has assisted this author in the creation of the following definition of benchmarking. Benchmarking is, "The process of measuring key performance indicators and comparing those indicators against set internal standards and/or other similar organizations to ensure the continual improvement of services".

Results of this study have determined that organizations implement benchmarking because it, "…will create constant improvement and change within your organization" (Patterson, 1996, p. 19). The ability to change processes within an organization also creates opportunities to improve service delivery. This is due, in part, to the natural competitive spirit within human beings. In essence, benchmarks keep score of how someone or something is performing. The score is then compared to a set standard, target or another's score. As in any individual or team sport, a person becomes motivated to either remain the best or find a way to become the best.

In relation to public services, this research also suggests that governments have reaped the benefits of performance measurement and benchmarking.

Fairfax County, Virginia reports,

> We have seen similar benefits accrue for Fairfax County. In general, governments that measure performance do so because it strengthens accountability, enhances decision-making, improves customer service, assists governments in determining effective resource use and supports strategic planning and goal setting (Budget, 2001, p. 5).

It is apparent that City Councils and Municipal Administrators are searching for ways to improve government services. It is this author's opinion that these expectations of higher quality and improved service delivery are hinged to higher expectations of the community and the high cost of service delivery. The Casper Fire Department is expected to deliver cost efficient, high quality services. Our challenge is to meet these service expectations and to prove through data that we are doing it. This research has shown that benchmarking is the vehicle that will deliver us to continual quality improvement.

Results of this study have discovered many different variations on how organizations develop and implement a performance measurement-benchmarking program. As processes and models were suggested and debated by experts in the field, this author came to realize that no one process or model itself was thought to be universally accepted. "The problem with trying to apply a national model to local service providers is that nearly everyone providing service does so within the constraints of local circumstances" (Herald, 2000, p. 24). It appears that a key factor in choosing an implementation process or model is to first look at the current needs of the agency being considered. As this author evaluates the multitude of benchmarking processes for the CFD, further results have discovered that three authors recommend the use of the PDCA

cycle and process. The PDCA cycle is described by these authors as P-plan, D-do, C-check, A-act. Initially this PDCA cycle may sound much to general in its format but results of this research project include many specific steps within the PDCA cycle that help guide an organization thorough the process. After evaluating the merits of each suggested process, it is this author's opinion that the model suggested by James Patterson provides a thorough step-by-step process that can be easily implemented and used by the Casper Fire Department.

An element of the PDCA cycle includes the identification of benchmarking partners. These benchmarking partners are used as external comparisons to identify performance gaps between the organizations. Survey results have provided this author with a list of potential benchmarking partners to be considered when developing the CFD's benchmarking program. Results have indicated that 47 fire departments would like to be considered as a benchmarking partner with the CFD. Another integral part of the benchmarking process includes the development of specific benchmarks. It was interesting to discover that only 37.6% of the respondents report that they are currently using formalized benchmarks to measure their performance. It is difficult for this author to make a definitive conclusion on how widely benchmarking is used in the fire service. This is due to three factors. One being that the scope and purpose of this research did not focus on how many fire service agencies across the Country used benchmarking programs. Secondly, the control group for the survey did not represent a cross section of the fire service across the United States. Lastly, a low survey return rate of 47.8% precludes such a definitive conclusion. However, it is obvious that a lower number of respondents to this survey use benchmarking than those who do not. 29 reported that they use formalized benchmarks to measure performance and 48 respondents did not. In relation to this issue, survey question 4 asked the 48 respondents who do not currently use benchmarks if they

were planning to develop benchmarks in the future? Results of this question revealed that 22 or 45.8% answered yes, 7 or 14.5% answered no and the remaining 19 or 39.5% answered that they were unsure. This would lead this author to believe that benchmarking is catching on as a management tool but more research and education on the topic is needed to prove the benefits of such a program.

This study went further and results have identified 185 specific benchmarks that the 29 respondents' departments are using. It is important to note that these benchmarks were identified as being meaningful to each respective department. Another source of sample benchmarks can be found in David N. Ammons (2001) book entitled, *Municipal Benchmarks: Assessing Local Performance and Establishing Community Standards.* These sample benchmarks will be used as examples and as guides during the development of the benchmarking program for the CFD.

It is apparent that in order to provide continual quality service an organization must develop and implement a performance measurement system that utilizes benchmarking as a tool to succeed. The benefits of benchmarking are numerous to organizations and more specifically the Casper Fire Department. The implications seem to be clear. Either use benchmarking as a tool for success or choose not to use benchmarking and continue down the road of mediocrity and possibly failure. Author James Patterson validates this point by quoting W. Edwards Demming, "You do not have to do this, survival is not compulsory" (Patterson, 1996, p. 19). The Casper Fire Department chooses to improve and succeed as a modern day fire department. The results from this research project will educate members of the fire service on the importance of benchmarking as well as lay a foundation for the development of a benchmarking program for the Casper Fire Department.

RECOMMENDATIONS

The following recommendations are based upon the problem and purpose statement of this research project and resulting research. As stated early on, the problem for the Casper Fire Department is that there is no existing performance measurement program in place that uses benchmarking to measure, evaluate and monitor the department's performance. The purpose of this research is to evaluate and identify an effective plan that will aid in the development and implementation of a benchmarking program for the Casper Fire Department.

The research in this project has demonstrated the importance of benchmarking to an organization. The literature review and survey results have explained what benchmarking is, why it is important, the benefits of benchmarking and how it can be implemented. This author has created an action plan that has been developed from the results of this research. More specifically, major elements of the plan are adopted from the PDCA cycle recommended by author James G. Patterson (1996, p. 55-60). The following action plan will be recommended to the City of Casper City Manager for approval by April 1, 2002.

1. Communicate the purpose and importance of benchmarking to all City of Casper Fire Department employees. This discussion will focus on the benefits of benchmarking and the elements of the benchmarking action plan.
2. Meet with the City Manager to discuss feedback from the employee meetings and to ensure commitment from administrative personnel within the City of Casper.
3. Establish benchmarking team. This team will be composed of a cross section of fire department employees who are committed to the success of this project.
4. Develop and implement a benchmarking training program for the team members.

5. Create a benchmarking project action plan. This plan should include but is not limited to the following elements:
    - Goals and Objectives
    - Roles and Responsibilities
    - Scope and Resources
    - Key Players
    - Critical Success Factors
6. Identify the areas or processes that we want to improve. This evaluation will lead to what we should benchmark. The use of the following criteria will aid in the development and validation of meaningful benchmarks:
    - Is the benchmark important to our customers?
    - Is the benchmark consistent with our mission and values?
    - Does the benchmark reflect an important service need?
    - Is the benchmark significant in terms of costs or key nonfinancial indicators?
    - Is the benchmark in an area where additional information could influence plans and actions?

    The benchmarks can include any process that is vital for customer satisfaction and department success. (Sample benchmarks identified in research project should be used as examples and points of discussion)
7. Study all identified benchmarks and associated processes. The purpose of this study and evaluation is for team members to gain complete understanding of the processes used. This understanding will be important when comparing

benchmarking partner processes and when modifying processes to achieve performance improvement.

8. Develop a Benchmarking Partner Criteria Matrix to evaluate potential benchmarking partners. This matrix should include the 47 departments that this research had identified as being willing to become benchmarking partners with the Casper Fire Department. The purpose of this matrix is to narrow the selection from 47 potential partners to 6. It is important that the developed criteria for this matrix lead to identifying departments that are of similar characteristics.
9. Contact each potential benchmarking partner and formalize benchmarking partnership. The goal is to formalize at least 2 benchmarking partners with 4 held as alternates.
10. Share benchmarking data with the benchmarking partners.
11. Analyze the benchmarking partner data collected. This analysis should identify performance gaps between what is and what could be. The larger the gap between the CFD and the benchmarking partner, the greater the need for to improve. This step in the process will also include the analysis of all internal benchmarks.
12. Communicate these findings to both internal and external stakeholders.
13. Identify those areas that do not meet established benchmarks.
14. Modify or select processes that will improve performance. This action is implemented in an effort to improve service so that the benchmark can be met.
15. Implement new process or processes and evaluate the results during a prescribed test period. If the modified or new process succeeds in meeting the established

benchmark, formally implement the process. This step may include the recalibration of benchmarks.

16. Re-evaluate benchmarking data on a regular basis and make modifications of processes and benchmarks as needed. This will lead to a continuous monitoring, evaluation and modification of benchmarking processes within the organization.

A recommendation to future readers of this Applied Research Project is to further research how wide spread the benchmarking concept is utilized by the fire service in the United States. Research could also be conducted on why departments are not utilizing benchmarking programs. Also, it is likely that new performance measurement systems will be developed in the future and readers should conduct research to draw comparisons between existing benchmarking systems and the new systems to determine which ones are most effective in the fire service.

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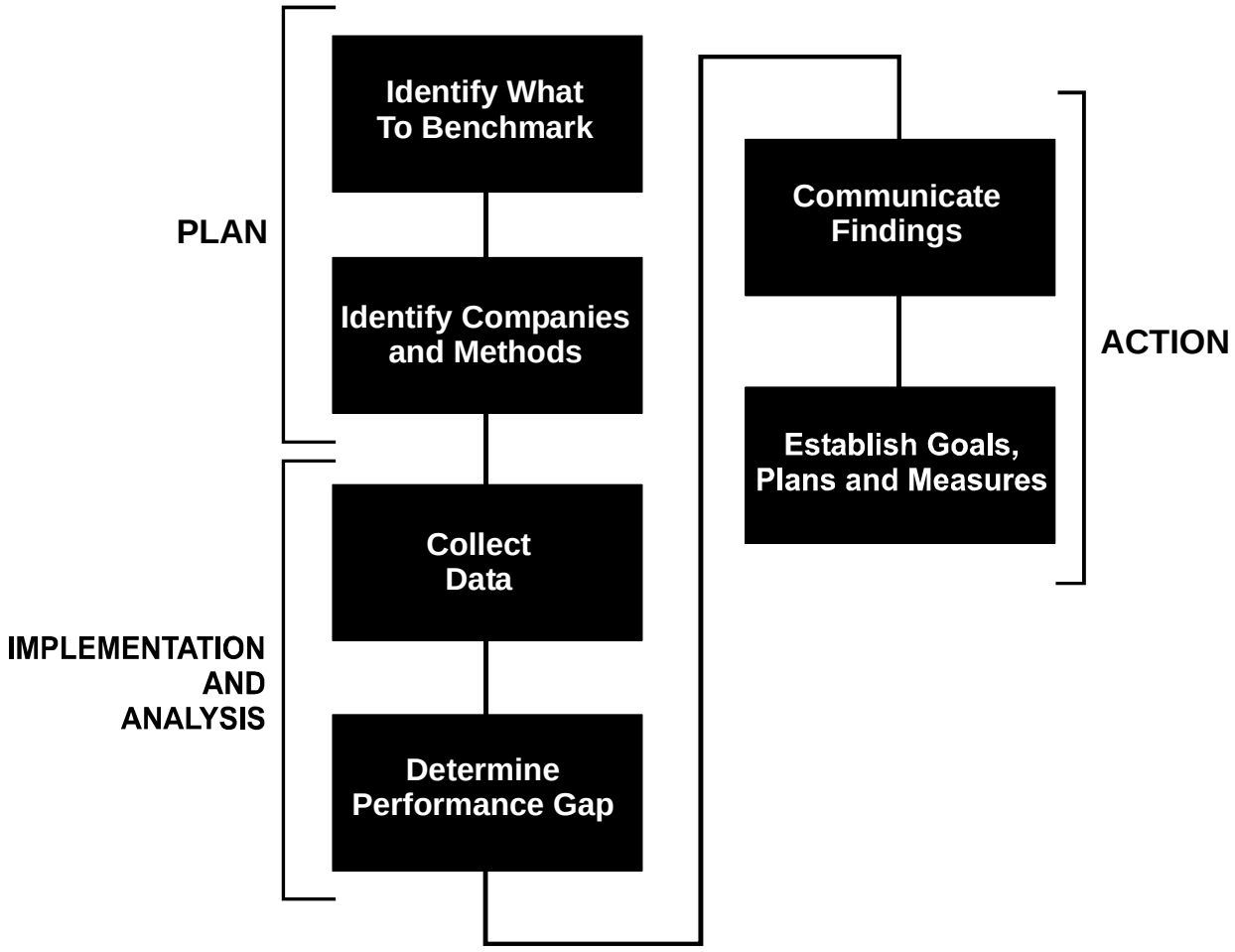
Appendix A-1
Implementation Process
Brian H. Wilbur (1998, p. 30)

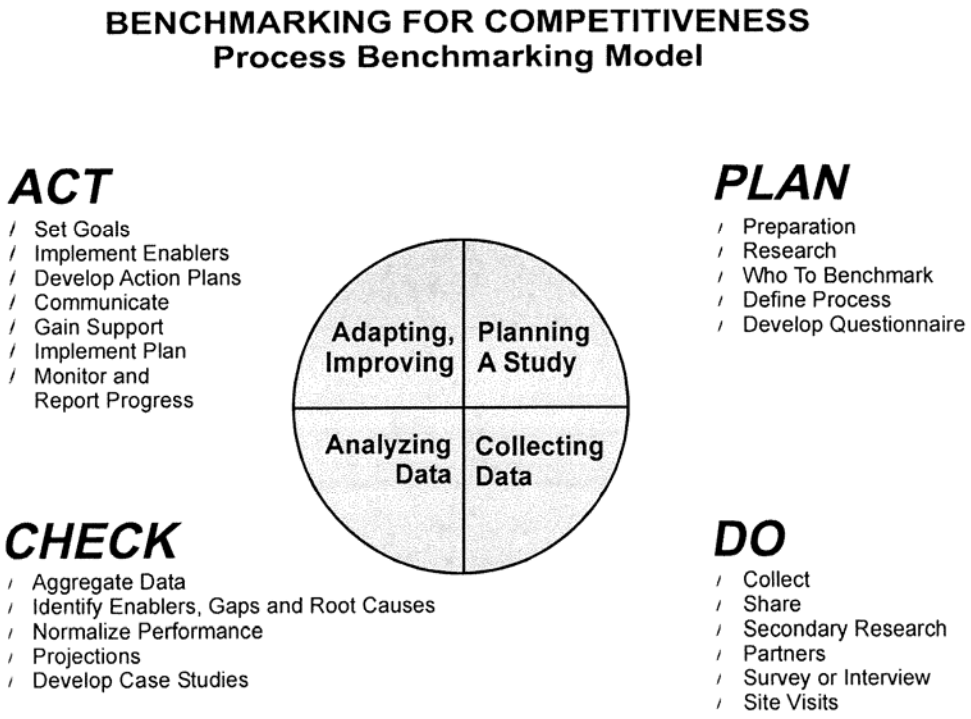
Recommended Implementation Process		
Step	Function	Source
1	Secure input and support from front line employees and supervisors.	Ammons, 1996, p. 17
2	Determine goal of information of process effort; e.g. quality improvement (benchmarking) or resource acquisition (comparative)	
3	Identify what should be measured.	Doyle (1995)
4	Identify the key performance variables to measure cost, quality, and efficiency for the functions ... selected.	Bruder and Gray, 1994
5	Identify (comparison or) benchmark partners - the selection of comparable organizations.	Gay, 1993
6	Collect data - develop a data collection method to measure the objectives.	Gay, 1993
7	Measure your own performance for each benchmarked item, and identify the gaps between you and the best-In-class.	Bruder and Gray, 1994
8	Analyze data	Doyle, 1995
9	Insure your audience has a common level of understanding of terms and concepts prior to making any presentation	
10	Communicate findings internally.	Doyle, 1995
11	Develop action plans - the preparation of a detailed road map showing how the department will accomplish its improvement goals.	Gay, 1993
12	Implement actions and monitor results	Gay, 1993.
13	Recalibrate benchmarks - the periodic review of benchmarks.	Gay, 1993

Appendix B
Implementation Process
Randy Bruegman (Bruegman, Chap. 4, p.7)

BENCHMARKING
Process Flow Chart



Appendix C
Implementation Process
Randy Bruegman (Bruegman, Chap. 4, p. 8)



Appendix D
Survey Cover Letter

December 12, 2001

Dear Chief:

My name is Mark Young and I am the Fire Chief in Casper, Wyoming. I am in the process of completing an applied research project in conjunction with an Executive Development course through the National Fire Academy. The subject of my research project is "Benchmarking Performance". The purpose of this letter and survey is to gather information on how many comparable fire departments use benchmarks as a performance measurement tool, what useful benchmarks have been identified and identifying fire departments who wish to become benchmarking partners with the Casper Fire Department.

I would appreciate it if you would take a few minutes of your time to complete the attached survey. A self addressed, stamped envelope is provided for you to mail the survey back to me. Surveys must be returned by January 7, 2002.

I want to thank you in advance for taking your time to answer the survey. If you would like a copy of the completed applied research project or the results of the survey when it is completed, please call me at 307-235-8222 or e-mail me at myoung@cityofcasperwy.com and I will be happy to see that you receive one.

Sincerely,

Mark P. Young
Fire Chief

Enclosure

Appendix E
Benchmarking Survey Instrument

1. Does your department use formalized “Benchmarks” to measure performance?
YES or NO

   Examples: First due companies will respond to 90% of reported structure fires within 5 minutes from dispatch time.

   The hazardous materials unit will respond to at least 95% of all hazardous material incidents within 20 minutes from dispatch time.

   The average time to control a residential fire will be 20 minutes from arrival.

   90% of all working fires will be stopped short of total loss.

   90% of all structure fires will be contained to room of origin.

   Rescue and extricate persons trapped by motor vehicle accidents, industrial mishaps, or other emergencies within 15 minutes of arrival.

   Respond to fire safety complaints within 8 hours.

   Conduct 100 hours of Public Education Activities within the community.

2. If you answered Yes to #1, please include the specific benchmark and/or benchmarks your department uses and finds meaningful. (please use the back of this form if needed)

3. If you answered Yes to #1, please include any benchmarks that your department developed, but ultimately did not find useful and discontinued to use. (please use the back of this form if needed)

4. If you answered NO to #1, are you planning to develop benchmarks for your department in the future? YES NO UNSURE

Appendix E
Benchmarking Survey Instrument

Information on your department:

5. Number of personnel? _____

6. Population of your community or jurisdiction? _____

7. Size of service area in square miles? _____

I intend to develop and implement a handful of meaningful benchmarks for the Casper Fire Department. I would also like to identify and establish benchmarking partnerships with other comparable departments who use similar benchmarks. I would ask partnering departments to share their benchmarking data with us and we would share our benchmarking data with them. The sharing of this data will lead to the development of comparisons for use in measuring the performance of our department.

8. Would you be willing to be a benchmarking partner with the Casper Fire Department?

Yes or No

If you answered Yes to question #8, please include the following:

9. Name:

Rank:

Department:

Department Mailing Address:

City:

State:

Zip Code:

Appendix E
Benchmarking Survey Instrument

e-mail:

Website:

Information on the City of Casper Fire Department

Population 49,960

Staffing 73 Paid

Service Area 22 Sq. Miles

Fire Stations 5

Services Provided: EMS First Responder, Fire Prevention, Fire Suppression, Technical Rescue, Search & Rescue, Haz-Mat, Wildland, Public Education

Casper Fire Department

200 N. David

Casper, WY 82601

e-mail: myoung@cityofcasperwy.com

Website: www.casperfire.com

Phone: 307-235-8222

Fax: 307-235-8218

Please return your completed survey in the enclosed self addressed stamped envelope or fax by January 7, 2002.

Thanks for your time!

Appendix F
Benchmarking Survey Results

1. Does your department use formalized “Benchmarks” to measure performance?
   Yes or No

   29 Yes / 37.6% 48 No / 62.3%

2. If you answered yes to #1, please include the specific benchmark and/or benchmarks your department uses and finds meaningful.

- Response time within 6 minutes 90% of the time.
- Trauma patients enroute to hospital within 10 minutes of unit arrival.
- 100% of Annual Fire Safety Inspections completed each year.
- Provide 20,000 contacts with residents/businesses through public education programs.
- Patient transport within 20 minutes of arrival.
- Full assignment on scene within 8 minutes of dispatch of structure fire.
- Average 3 minutes or less on all emergency calls for first arriving unit using "travel time" as the benchmark measure.
- Maximum 8 minutes (travel time) for arrival of all units.
- Arrival of first unit within 4 minutes (travel time) on 90% of all emergency calls.
- Respond to complaints of all code violations within 24 hours.
- Respond to complaints of fire & life safety code violations within 8 hours.
- 95% of apparatus operational at all times.
- Maintain an ISO rating of 2 or better.
- Maintain at least 2 minority cadets in the fire cadet program.
- Increase the annual number of training hours offered by 8.
- Maintain or reduce the operating cost per citizen compared to FY 2000.
- Maintain or reduce workers compensation cost compared to FY 2000.
- 1st Engine 4 minutes.
- Full crew & operation 8 minutes.
- 90% of all operations.
- 10 day turnaround on all inspections for business occupancy.
- Greater than 8 inspections per day per inspector.
- Have an ALS engine within 3 miles of every built-upon area in Hoover.
- Have transport capable EMS unit within 5 miles and average response distance of 3 miles from fire station.
- Have ladder company within 5 miles of all built-upon property.
- Have ladder company within 3 miles of high risk and commercial occupancies.
- All built-upon properties must have water supply to meet the fire flow requirements of the ISO.
- Arrival time, 5 minutes, 90%.
- Save rate from fire - contain to room of origin - 95% save rate.
- Pre-Fire Plans - Build - 3 years; Edit - 1 year; Implement - 1 year.
- Fire Safety Inspections - 1,900/year with compliance progress.

Appendix B-3
Benchmarking Survey Results

- Training - ISO standards and department needs.
- Public Education - 20 events/company.
- Fire Flow Tests - 900/year.
- Be onscene for advanced life support intervention within 10 minutes, 90% of the time.
- Respond to all ALS call within 6 minutes, 90% of the time.
- Complete all (100%) annual fire inspections.
- Initial effective response force will arrive within 8 minutes for 90% of all fire and EMS incidents.
- The first due unit will be capable of initiating incident control for fire emergencies or provide ALS for medical incidents.
- 4 minute response time to all EMS and fire emergencies within the city 90% of the time.
- EMS on-scene time less than 20 minutes for all occurrences 100% of time.
- 10 minute on scene for all traumas 100% of time.
- Provide first engine response to the emergency scene in not more than 6 minutes for 95% of all emergency incidents.
- Provide emergency medical service within 6 minutes of receipt of a call 95% of the time.
- Provide second engine company response of 6-8 minutes on all calls 95% of the time.
- Achieve 75% violations corrected (Fire Prevention Bureau).
- All responses shall be reached within our city within 6 minutes. Anything outside this range shall be explained in writing.
- All safety complaints of a life safety nature are investigated the same working day.
- Numerous SOP's give us direction, but are not necessarily measureable.
- First due companies will respond to 90% of reported structure fires within 5 minutes from dispatch time.
- 90% of all structure fires will be contained to room of origin.
- 100% citywide inspection for businesses annually.
- Process emergency calls for service within 60 seconds 90% of the time.
- Achieve a turnout time of 60 seconds or less 90% of the time.
- Achieve arrival time of the first company capable of initial fire attack/rescue within 6 minutes or less 90% of the time.
- Achieve arrival of balance of initial full assignment, which would allow interior firefighting operations, within 10 minutes 90% of the time.
- Achieve arrival time of the first company for size-up of the rescue within 6 minutes or less 90% of the time.
- Assemble additional companies for technical rescue capable of initiating a rescue within 10 minutes 90% of the time.
- Safely complete rescue/extrication to ensure delivery of patient to a definitive care facility within one hour.
- Achieve arrival time of the first company capable of investigating a haz-mat release within 6 minutes 90% of the time.
- Achieve an arrival time of the first company capable of providing basic life support & automatic external defibrillation within 6 minutes 90% of the time.

Appendix F
Benchmarking Survey Results

- Respond to emergencies in a timely efficient manner; meet the 6 minutes response time.
- 80% of calls will have a response time of 6 minutes or less.
- Achieve customer survey rating of good to excellent on mailed survey cards.
- 90% of those surveyed report good communication throughout department on internal survey.
- Meet ISO standards while maintaining a class of 4 or below.
- Staff is to maintain 100% of all apparatus, breathing apparatus, emergency equipment, and facilities according to established standards & schedule.
- Breathing apparatus as per CCR Title 8. Target 100% compliance with CCR Title 8.
- Staff is to ensure all contracts are managed as approved with no deviations.
- Staff is to calculate the operating costs per capita (year to date).
- Staff is to calculate costs per capita for disaster preparedness, dispatch services, haz mat response team, operating costs (total), paramedic services.
- Staff is to inspect all facilities monthly with any deficiencies documented with a written report.
- Staff is to process work requests to address all deficiencies in accordance to the Facility Repair/Maintenance Categories.
- Staff is to correctly enter all report data into appropriate databases according to established time lines.
- Staff is to calculate the amount of fire loss per capita.
- Staff is to calculate fires reported per 1,000 population served.
- Staff is to calculate the number of sworn firefighters per 1,000 population served.
- ISO target rate 2.
- Staff is to ensure that payroll is submitted on time without errors.
- Staff is to ensure that performance evaluations are completed on time for each platoon.
- Staff is to ensure that quarterly and annual performance indicator reports are completed five weeks following the close of each quarter.
- Staff is to ensure that all operations division personnel are scheduled annually for the tuberculosis exam.
- Staff is to ensure that individual safety gear is evaluated according to established standards and inspection schedules to comply with SOP 33.
- Staff is to perform facility safety inspections according to established inspection schedules.
- Staff is to ensure that the safety gear 7 year replacement plan is being implemented according to schedule.
- Staff is to measure the number of lost equipment.
- Staff is to measure the number of damaged equipment.
- Staff is to measure the number of exposures.
- Staff is to measure the number of personnel injuries.
- Staff is to measure the number of vehicle accidents.
- Staff is to update the hazard communication program by updating onsite hazardous materials list and MSDS on file.

Appendix F
Benchmarking Survey Results

- Staff is to ensure that all operations division personnel are scheduled annually for a hearing exam.
- Staff is to ensure that all operations division personnel comply with the hepatitis B program.
- Staff is to ensure that safety gear records are maintained for all operations division personnel.
- Staff is to ensure that at least four safety committee meetings are scheduled and conducted.
- Staff is to ensure that response times to emergency incidents are to be no more than 7 minutes 90% of the time.
- Staff is to ensure that the Joint Apprenticeship Program (JAC) completed as scheduled.
- Staff is to ensure that pre-fire plans are presented according to established standard and scheduled by platoons.
- Staff is to ensure that pre-fire plans are developed according to established standard.
- To maintain an effective customer satisfaction rating of 9 on a scale of 1-10 for all requests for emergency service and maintain a satisfaction rating of 8 for both engine company and fire prevention inspections.
- To maintain an emergency response capability for both fire and medical services that will ensure the on scene arrival of the first unit within 8 minutes to all areas served using total reflect time.
- To reduce the occurrence of fire in all occupancy classification below the five year average of 15 fires per year through a comprehensive range of fire prevention and educational programs.
- Maintain code 3 service capability based on total reflex time that will ensure on scene arrival of first unit within 7 minutes.
- Maintain 8 minutes to all areas served with a moderate or low potential for life loss, economic value or fire flow from receipt of 911 call in 90% of request for service.
- To provide a minimum of 15 hours of training per month per firefighter and enhance skills in heavy rescue and confined space emergencies.
- To maintain a code 3 level of emergency medical response of EMT and EMT-D based on total reflex time.
- Ensure the arrival of an engine company within 8 minutes of receipt of an EMD processed 911 call in 90% of requests for service to all areas.
- To confine 90% of all structure fires within 20 minutes of receipt of a 911 call to area of involvement as reported by first arriving unit, using 1st and 2nd alarm assignment
- To maintain a code 3 service capability, based on total reflex time that will ensure on scene initiation of wildland structural fire protection.
- First arriving unit (wildland) within 8 minutes and 1st alarm companies within 12 minutes from receipt of 911 call in 90% of responses for service to all areas served.
- To ensure the operational readiness of all personnel and equipment by maintaining a 90% competency of personnel during proficiency evaluations.
- Maintenance of equipment at 95% of the manufacture specification.
- Maintain personnel availability to conduct joint inspections with the code enforcement team within 72 hours of request from the code enforcement officer 95% of the time.

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Benchmarking Survey Results

- Forward written documentation to the code enforcement officer within 48 hours of inspection for 90% of inspections.
- Respond to requests for reviews of projects by community development and return comments by their deadline 95% of the time.
- Respond to requests for reviews of projects by the Building and Safety Division and return comments within 10 days 90% of the time.
- Respond to review of fire protection system design and installation and return comments within 10 days in 90% of requests for service.
- Provide fire inspection services to contractors on 24 hours notice 85% of the time, with 100% of the requests being filled within 48 hours.
- Conduct engine company level fire inspections of all schools annually; retail stores and assembly occupancies every other year; and offices and exterior of apartments every 3 years.
- Insure 75% compliance with all engine company level inspection hazard found on the first re-inspection and 95% compliance by the second re-inspection.
- Ensure the arrival of a paramedic unit within 10 minutes of receipt of a 911 call in 90% of requests to all areas
- Conduct continuous quality improvement reviews of 98% of all ALS responses using contact EMS staff.
- Provide monthly courses of instruction in CPR and First Aid for a minimum of 6 residents per class.
- Provide 3 DART training classes per year with a minimum of 15 participants per class.
- First due companies will respond to 90% of reported structure fires within 5 minutes from dispatch time.
- EMS unit, when in quarters at time of dispatch, must be on radio and mobile within 1 minute of dispatch regardless of time of day/night.
- Fire safety complaints are investigated the same day received.
- 1st due engine arrives within 5 minutes of alarm 90% of time.
- 1st due truck arrives within 7 minutes of alarm 90% of time.
- Balance of assignment arrives within 10 minutes of alarm 90% of time.
- Call handling time @ dispatch within 60 seconds 90% of time.
- Turnout time (wheels rolling) within 60 seconds 90% of time.
- Respond to fire/emergency calls within 5 minutes 90% of the time (first due apparatus).
- Initiate investigation of all structure fires by on-call fire investigation prior to first-in company leaving the scene.
- Conduct inspections of no less than 2,650 structures annually.
- Conduct 230 public education classes annually (goal 15,000 students).
- Maintain a training schedule to provide each suppression division member on average of 180 hours training per year.
- Hold monthly officer training sessions.
- Perform preventive maintenance/service on each apparatus every 3 months.
- Service all emergency generators bi-annually.
- Conduct annual testing on ladders (ground to aerial) hose, and pumps.

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Benchmarking Survey Results

- Ensure 2 in, 2 out is followed for all interior firefighting evolutions 100% of the time.
- The organization shall respond to 80% of all calls for assistance within 5 minutes. Will be affected by bumps and traffic diverters.
- First-due fire company service will be provided to ensure a maximum 5 minute travel time for 80% of all emergency incidents.
- Paramedic first response service will be provided to ensure a maximum response time of 6 minutes and 59 seconds to 90% of all medical emergency incidents.
- 1st alarm response assignment service will be provided to ensure a maximum 10 minute travel time for the entire 1st alarm response assignment to 80% of all structural fires.
- Complete all actual and conceptual plan reviews within 15 working days of their receipt.
- Provide new construction-related inspections within 3 working days of requests for such inspections.
- Respond to customer-generated fire hazard complaints within 5 working days of their receipt.
- Investigate the cause, origin, and circumstances of fire and unauthorized releases of hazardous materials, and write investigation reports about designated incidents within 45 working days.
- Conduct a public education demonstration for grades K-3 at each public elementary school during the month of October.
- First due companies will respond to all calls in 5 minutes or less 90% of the time.
- Respond to 90% of emergency fire and EMS calls within 4.5 minutes
- Respond to 75% of emergency fire and EMS calls within 4.3 minutes
- Confine 80% of the structure fires to the object, area or room or origin.
- Complete 75% of assigned company fire prevention inspections.
- Complete 75% hydrant inspections assigned.
- Complete at least 48 fire/life safety programs (one per shift per station per month).
- Attend at least 4 training sessions or seminar related to FD operations, legal mandates, or Union issues. Conduct at least 5 Officers Training sessions.
- Maintain a minimum of 11 men on duty in 2 stations and deploy them when needed to arrive on scene within 4 to 6 minutes for 95% of requests for emergency response.
- Respond a minimum of 1 engine company to EMS calls where extrication is needed or there is a fire, or danger of fire, from fuel spillage.
- Fire suppression crews respond to EMS calls when no ambulances are immediately available to provide care until ambulance arrives; arrive on scene within 6 minutes.
- Reduce the dollar loss, as well as damage to property, by 5%.
- Respond to all alarms of fire with a minimum of: 2 3-man engines; 1 2-man ambulance; 1 battalion chief … 90% of the time.
- Provide manpower and equipment to honor our automatic aid agreements and contracts 90% of the time.
- Enter 100% of all fire reports to the firehouse reporting system program.
- Provide 200 digitized preplans on 5 vehicular laptops.
- Respond to requests for water related emergencies with divers in 30 minutes or less utilizing Rolling Meadows and mutual aid divers.

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Benchmarking Survey Results

- Respond to 90% of all requests for emergency medical assistance within 4-6 minutes.
- Provide station tours and educational programs at schools for children (preschool through 5th grade), places of business, public assembly, institutional, on request 95% of the time.
- Identify the cause and origin of 90% of all fires.
- Provide adequate number of in-station educational programs to insure that each member obtains 20 hours of training per month.
- Insure that the 1st due company will arrive on scene of any emergency in 5 minutes or less 80% of the time.
- Place a single attack line in service from the water supply on the unit and advance attack line to extinguish a one room and content fire. 1 Co; 3:00-3ff; 2:30-4ff.
- Establish a water supply and place into operation a master stream with 100' or 200' 4" hose. The GPM's will be determined during the evolution. 1Co; 5:00-3ff; 4:30-4ff
- 1st company utilize water supply on the unit and produce foam. Attack hydrocarbon fire. 2nd company establish water supply to 1st company and advance 2nd line (water) to backup team. 2 Co; 7:30-6ff; 7:00-7ff; 6:30-8ff
- Utilize water supply on unit, raise 24' extension ladder to a 2nd story window. Place attack line into second story window and advance until fire is located and extinguished. 1 Co; 4:00-3ff; 3:30-4ff
- 1st company establish water supply and supply 2nd company with maximum flow. 2nd company place a master stream into operation. The desired gpm's will be determined prior to beginning the evolution. 2 Co; 6:00-6ff; 5:30-7ff; 5:00-8ff
- 1st company hook up tight to a hydrant and flow __ gpm's, the delivery method will be determined prior to the evolution. 2nd company hook up to 1st company and flow ___ gpm's. 2 Co; 9:30-6ff; 9:00-7ff; 8:00-8ff
- 1st company will place attack lines or master stream into service. 2nd and 3rd companies will establish water supply from one source. 3 Co; 8:00 - 9-12ff
- Establish water supply and supply sprinkler or standpipe system. Type of system will be determined prior to evolution. 1 Co; 5:00-3ff; 4:30-4ff
- Establish water supply and place elevated stream in desired location. 1 Co; 5:00-4ff
- Illuminate fireground and secure utilities. 1 Co; 5:00-3ff; 4:00-4ff
- Using ground ladders "ladder the building. Use 24' extension ladder for the 2nd story; use 35' extension ladder to 3rd story. Quints place aerial ladder for anything 4th story and above. 1 Co; 4:00-engine; 6:30-quint
- Remove a victim down a ladder, from an upper stairwell; using a stokes basket for the ladder or webbing for the stairwell. 1 Co; 15:00-3ff; 12:00-4ff
- Properly stabilize and initiate extrication for a motor vehicle accident. This evolution involves patient stabilization and vehicle stabilization. Proper use of manual tools will be required. 1 Co; 25:00-3ff; 20:00-4ff
- Extricate and remove victim(s) involved in a motor vehicle accident. Properly demonstrate use of hydraulic, and pneumatic as well as manual equipment. 2 Co; 20:00-7ff; 20:00-8ff
- Perform a vertical confined space rescue. 2 Co; 30:00-7ff; 30:00-8ff
- Perform a high angle rescue. 1 Co; 30:00-5ff

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Benchmarking Survey Results

- 5 minutes 90% of the time.
- 5 pre-incident surveys per month.
- Meet or exceed 20 hours training per month.

3. If you answered Yes to #1, Please include any benchmarks that your department developed, but ultimately did not find useful and discontinued to use.

- Provide an adequate response before flashover occurs in 95% of all structure fires.
- Reduce diesel and gasoline consumptions by 5% in the division of fire operations
- Insure that the 1st due company will arrive on scene in 4 minutes.

4. If you answered No to #1, are you planning to develop benchmarks for your department in the future?
   Yes No Unsure

   22 Yes / 45.8% 7 No / 14.5% 19 Unsure / 39.5%

5. Number of Personnel

6. Population of your community or jurisdiction

7. Size of service area in square miles

8. Would you be willing to be a benchmarking partner with the Casper Fire Department?
   Yes or No

   47 Yes / 61% 25 No / 32.4% 5 Did not answer / 6.5%

   <u>Departments Interested in Becoming Benchmarking Partners</u>
   1. Bismark Fire Department
   2. Bowling Green Fire Department
   3. Center Point Fire District
   4. Cheyenne Fire Department
   5. City of Bloomington Fire Department
   6. City of Gastonia Fire Department
   7. City of Lancaster Bureau of Fire
   8. Cuyahoga Falls Fire Department
   9. Danville Fire Department
   10. Drexel Heights Fire Department
   11. East Hartford Fire Department
   12. Elyria Fire Department
   13. Fayetteville Fire Department

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Benchmarking Survey Results

14. Flagstaff Fire Department
15. Greenville Fire & Rescue Department
16. Hampton Fire & Rescue
17. Huntington Fire Department
18. Iowa City Fire Department
19. Johnson City Fire Dept
20. Jonesboro Fire Department
21. Kennewick Fire Department
22. La Crosse Fire Department
23. Lakeside Fire Protection District
24. Lauderhill Fire Rescue Department
25. Lealman Special Fire Control District
26. Lodi Fire Department
27. Middletown Division of Fire
28. Missoula Fire Department
29. Nacogdoches Fire Department
30. National City Fire Department
31. North Richland Hills Fire Department
32. Novato Fire District
33. Prichard Fire Department
34. Quincy Fire Department
35. Rapid City Dept of Fire Emergency Services
36. Rockdale County Fire Department
37. Rocky Mount Fire Department
38. Roseville Fire Department
39. Round Rock Fire Department
40. Salina Fire Department
41. South County Fire Authority
42. Strongsville Fire & Emergency Services
43. Tamarac Fire Rescue
44. Warner Robins Fire Department
45. West Bloomfield Fire Department
46. Wilkes-Barre Fire Department
47. Yakima Fire Department

Appendix G
Final Recommendation of Benchmarking Implementation Process

1. Communicate the purpose and importance of benchmarking to all City of Casper Fire Department employees. This discussion will focus on the benefits of benchmarking and the elements of the benchmarking action plan.
2. Meet with the City Manager to discuss feedback from the employee meetings and to ensure commitment from administrative personnel within the City of Casper.
3. Establish benchmarking team. This team will be composed of a cross section of fire department employees who are committed to the success of this project.
4. Develop and implement a benchmarking training program for the team members.
5. Create a benchmarking project action plan. This plan should include but is not limited to the following elements:
    - Goals and Objectives
    - Roles and Responsibilities
    - Scope and Resources
    - Key Players
    - Critical Success Factors
6. Identify the areas or processes that we want to improve. This evaluation will lead to what we should benchmark. The use of the following criteria will aid in the development and validation of meaningful benchmarks:
    - Is the benchmark important to our customers?
    - Is the benchmark consistent with our mission and values?
    - Does the benchmark reflect an important service need?
    - Is the benchmark significant in terms of costs or key nonfinancial indicators?

- Is the benchmark in an area where additional information could influence plans and actions?

The benchmarks can include any process that is vital for customer satisfaction and department success. (Sample benchmarks identified in research project should be used as examples and points of discussion)

7. Study all identified benchmarks and associated processes. The purpose of this study and evaluation is for team members to gain complete understanding of the processes used. This understanding will be important when comparing benchmarking partner processes and when modifying processes to achieve performance improvement.
8. Develop a Benchmarking Partner Criteria Matrix to evaluate potential benchmarking partners. This matrix should include the 47 departments that this research had identified as being willing to become benchmarking partners with the Casper Fire Department. The purpose of this matrix is to narrow the selection from 47 potential partners to 6. It is important that the developed criteria for this matrix lead to identifying departments that are of similar characteristics.
9. Contact each potential benchmarking partner and formalize benchmarking partnership. The goal is to formalize at least 2 benchmarking partners with 4 held as alternates.
10. Share benchmarking data with the benchmarking partners.
11. Analyze the benchmarking partner data collected. This analysis should identify performance gaps between what is and what could be. The larger the gap between the CFD and the benchmarking partner, the greater the need for to improve. This step in the process will also include the analysis of all internal benchmarks.
12. Communicate these findings to both internal and external stakeholders.

13. Identify those areas that do not meet established benchmarks.
14. Modify or select processes that will improve performance. This action is implemented in an effort to improve service so that the benchmark can be met.
15. Implement new process or processes and evaluate the results during a prescribed test period. If the modified or new process succeeds in meeting the established benchmark, formally implement the process. This step may include the recalibration of benchmarks.
16. Re-evaluate benchmarking data on a regular basis and make modifications of processes and benchmarks as needed. This will lead to a continuous monitoring, evaluation and modification of benchmarking processes within the organization.